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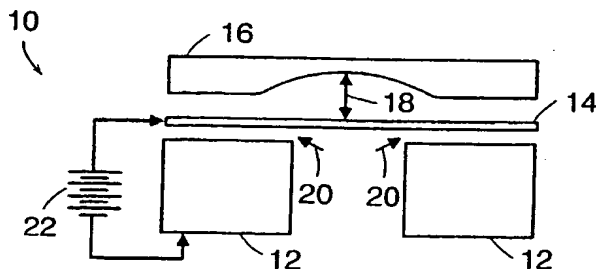
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(54) Title: TUNABLE FABRY-PEROT FILTER



(57) Abstract: A tunable Fabry-Perot filter includes an optical cavity bounded by a stationary reflector and a deformable or movable membrane reflector. A second electrostatic cavity outside of the optical cavity includes a pair of electrodes, one of which is mechanically coupled to the movable membrane reflector. Voltage applied to the electrodes across the electrostatic cavity causes deflection of the membrane, thereby changing the length of the optical cavity and tuning the filter. The

filter with the movable membrane can be formed by micro device photolithographic and fabrication processes from a semiconductor material in an integrated device structure. The membrane can include an inner movable membrane portion connected within an outer body portion by a pattern of tethers. The pattern can be such that straight or radial tethers connect the inner membrane with the outer body. Alternatively, a tether pattern with tethers arranged in a substantially spiral pattern can be used.

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INTERNATIONAL SEARCH REPORT

International Application No
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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G02B26/00 G02B26/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G02B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

WPI Data, PAJ, EPO-Internal, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DEHE A ET AL: "III-V compound semiconductor micromachined actuators for long resonator tunable Fabry-Perot detectors" SENSORS AND ACTUATORS A, ELSEVIER SEQUOIA S.A., LAUSANNE, CH, vol. 68, no. 1-3, 15 June 1998 (1998-06-15), pages 365-371, XP004139861 ISSN: 0924-4247 abstract; figures 2,4,5	1-3,6,7, 9-13
X	CH 681 047 A (LANDIS & GYR BETRIEBS AG) 31 December 1992 (1992-12-31) page 3, line 3 - line 35; figure 3 ----- -/--	1,3,6,9, 11,12

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 203 128 A (GUCKEL HENRY ET AL) 13 May 1980 (1980-05-13) column 7, line 39 - line 65 claim 19 figure 6 ---	1,3,6,9, 11,12
X	US 5 757 562 A (CORNILLAUDT JEAN ET AL) 26 May 1998 (1998-05-26) figure 2 ---	1,3,4,9, 11
X	US 4 859 060 A (KATAGIRI MASAYUKI ET AL) 22 August 1989 (1989-08-22) column 1, line 26 - line 61; figure 20 ---	1-3,9-11
X	JERMAN J H ET AL: "A MINIATURE FABRY-PEROT INTERFEROMETER WITH A CORRUGATED SILICON DIAPHRAGM SUPPORT" SENSORS AND ACTUATORS A, ELSEVIER SEQUOIA S.A., LAUSANNE, CH, vol. A29, no. 2, November 1991 (1991-11), pages 151-158, XP000241462 ISSN: 0924-4247 figure 1 ---	1,3,5,9, 11,12
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INTERNATIONAL SEARCH REPORT

Information on patent family members

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